Radiation simulation

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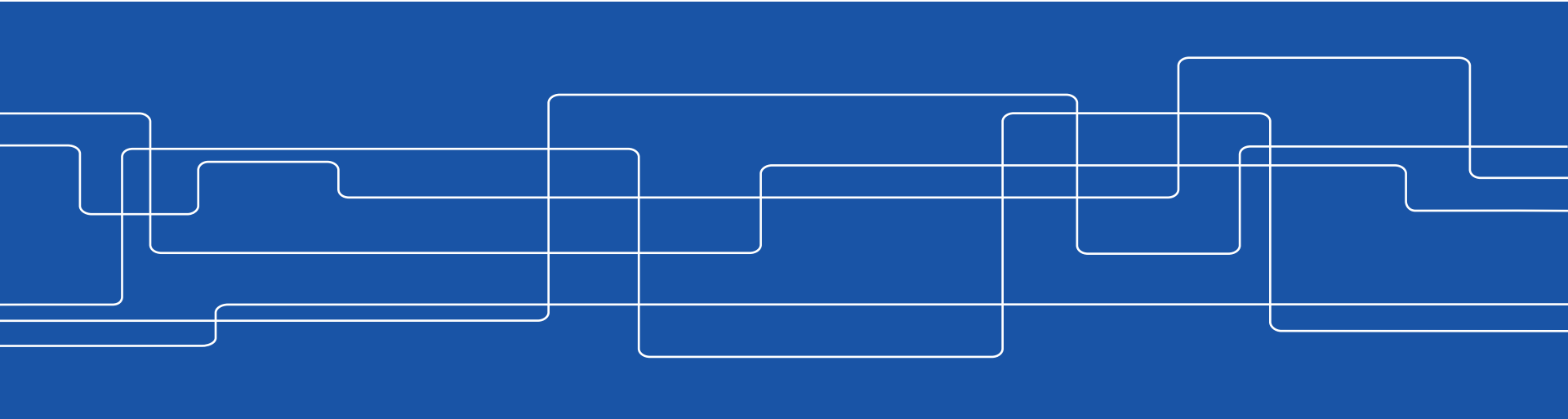
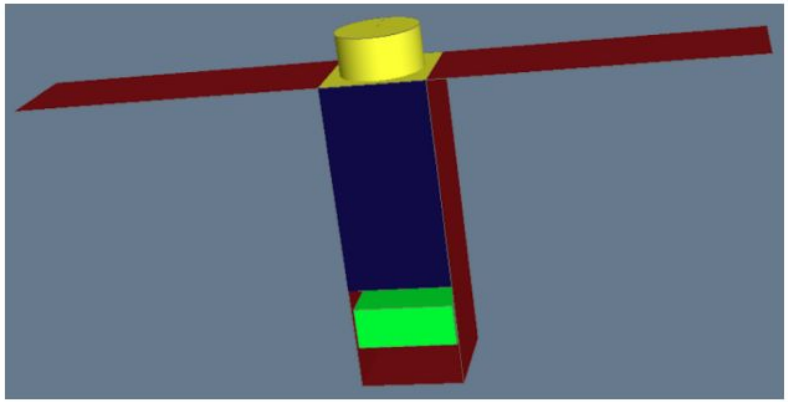


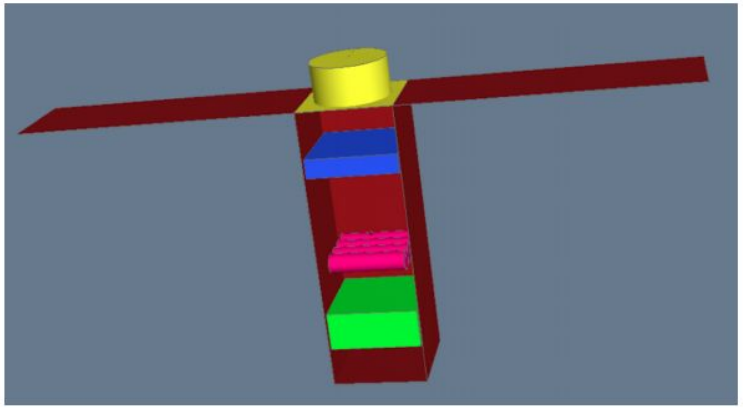
Content

- Introduction
- MIST Model in Systema
- Dose Depth curve
- Subsystems results
- Analysis
- Conclusion

MIST Satellite - Systema



+Y View



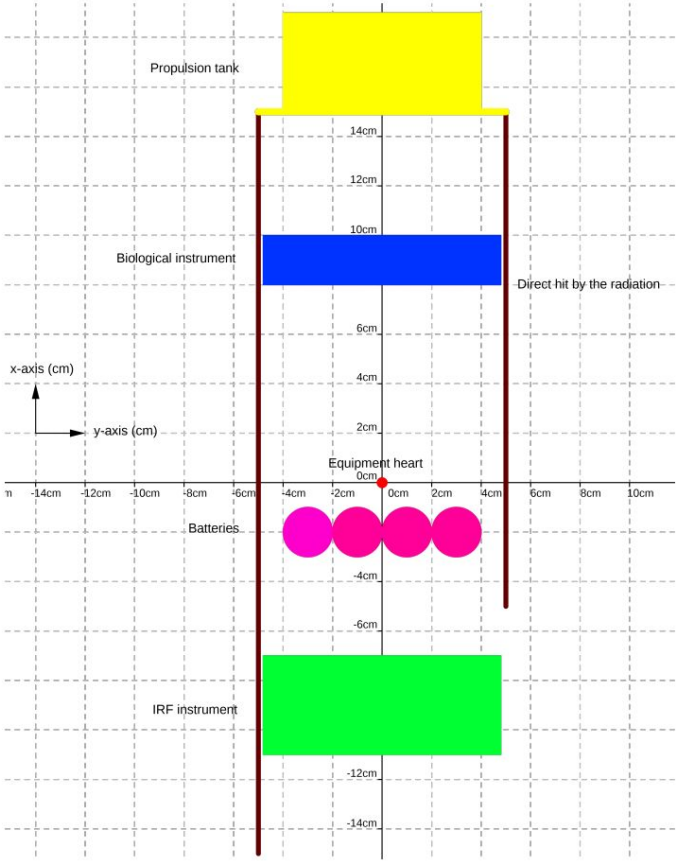
+Y View - hidden wall

MIST Configuration

MIST includes other components that are not taken into account

MIST in Systema:

- NanoProp
- MoreBac
- ISIS iOBC
- GomSpace BP4
- IRF Ratex-J



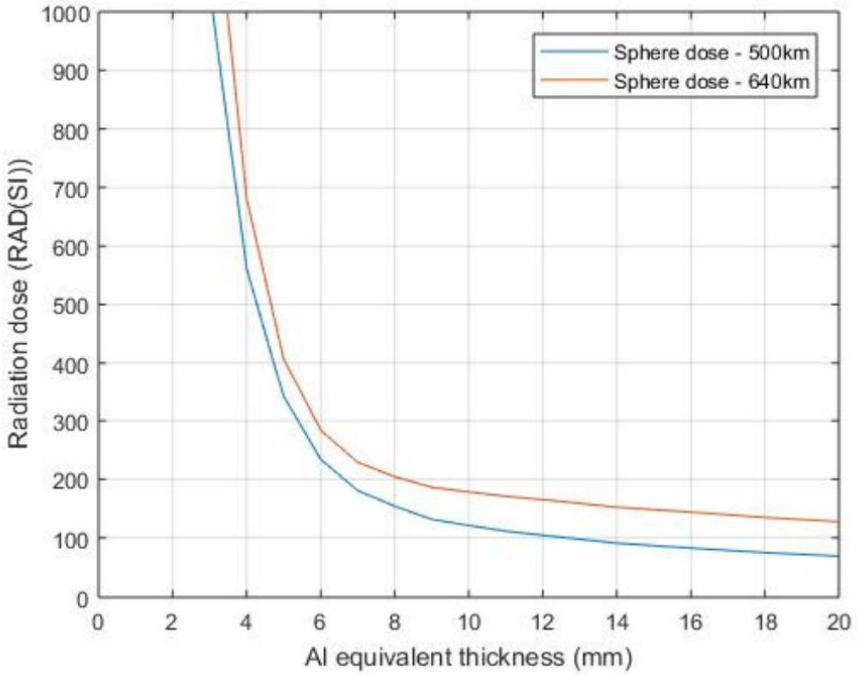
Subsystems description

Component	Dimensions	Thickness	Material
Propulsion experiment tank	Cylinder with 8 cm diameter and 0.04 m height, with disc on top of it and a plate of 0.1x0.1 m^2 at the bottom	0.0015 m	TA6V
Biological experiment tank	Box of 0.02x0.096x0.096 m^3	0.002 m	Aluminum 2024
Equipment heart	Sphere with 4 mm diameter	0.001 m	Density: 4832 $kg \cdot m^{-3}$
Batteries	4 cylinders with 0.02 m diameter and height of 0.08 m	0.006	Aluminum 7075
IRF experiment	Box of 0.04x0.096x0.096 m^3	0.002 m	Aluminum 2024
Solar array (wings)			

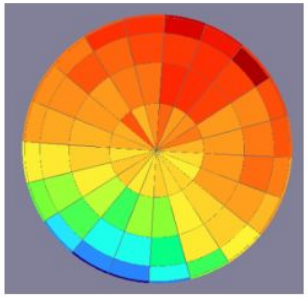
Radiation equivalent thickness

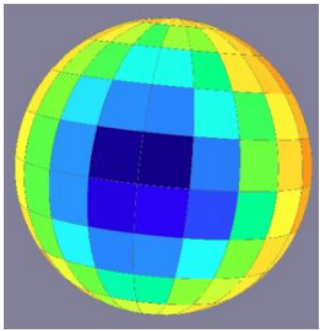
Radiation dose taken in the Sun Synchronous Orbit.

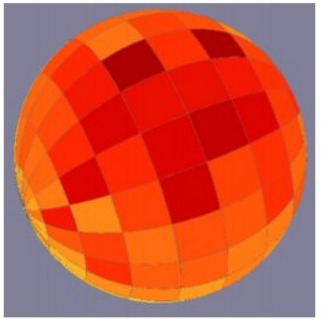
Radiation increases with altitude.



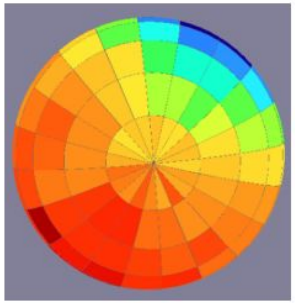
Computer at 640 km

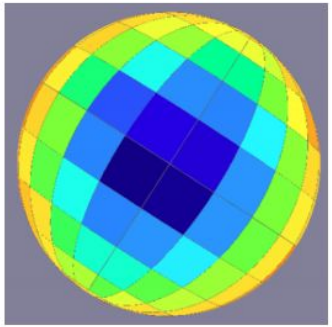


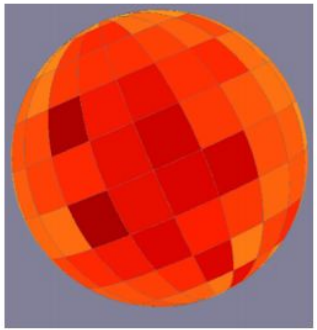


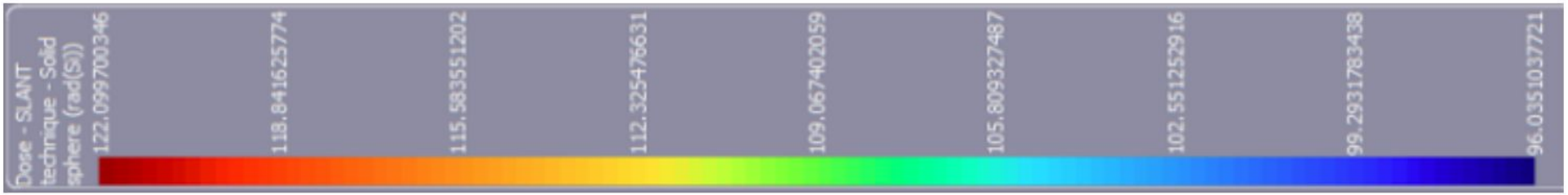


Computer at 500km

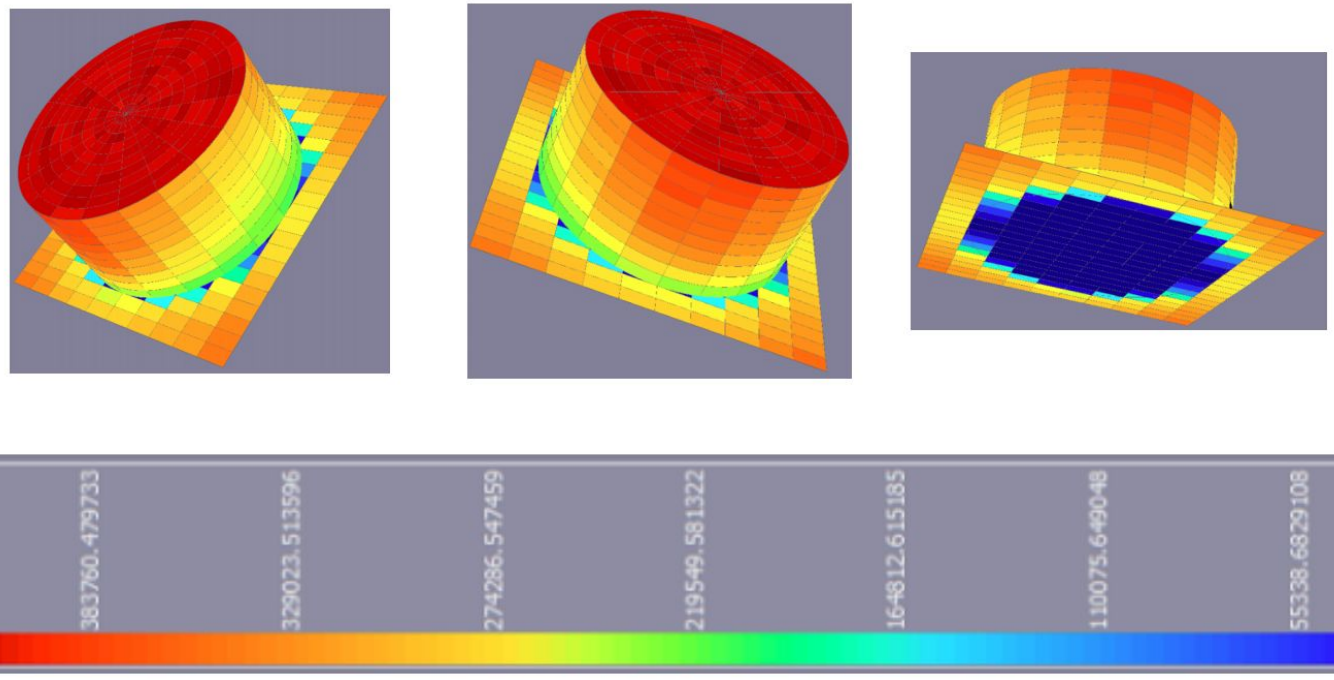




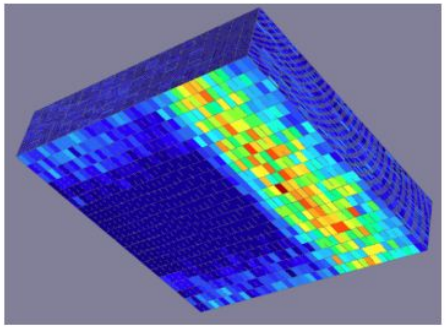


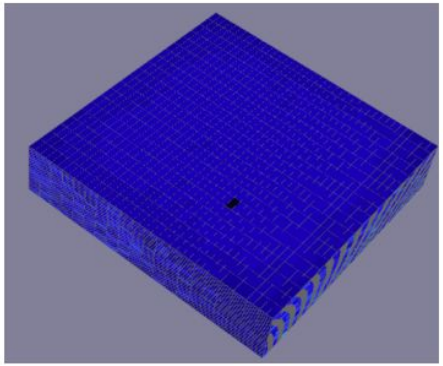


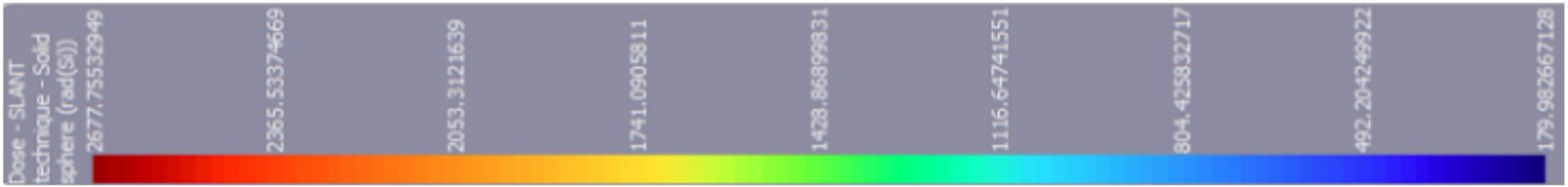
Propulsion tank at 640km



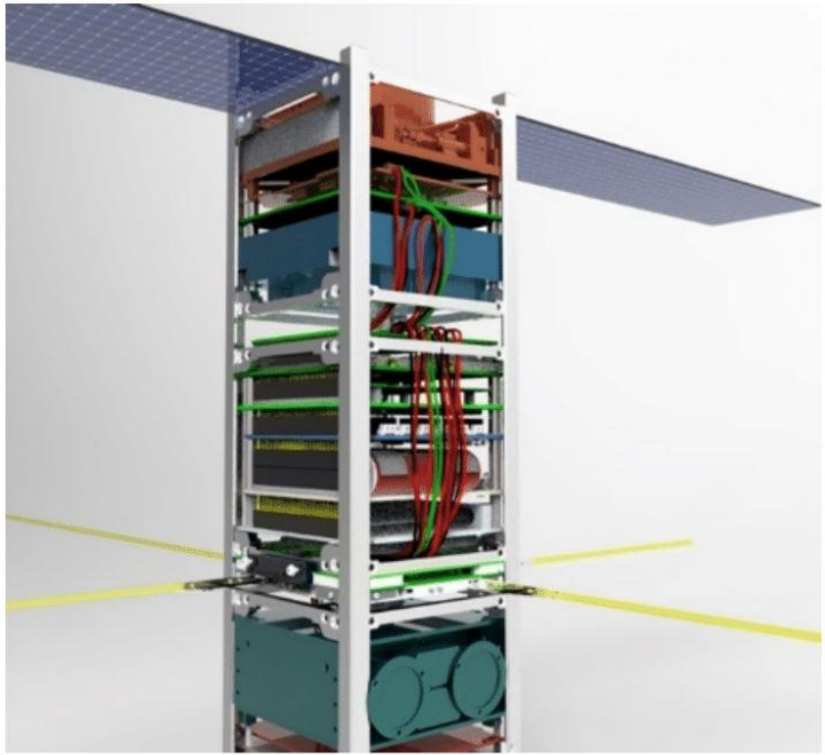
Biological experiment at 640km

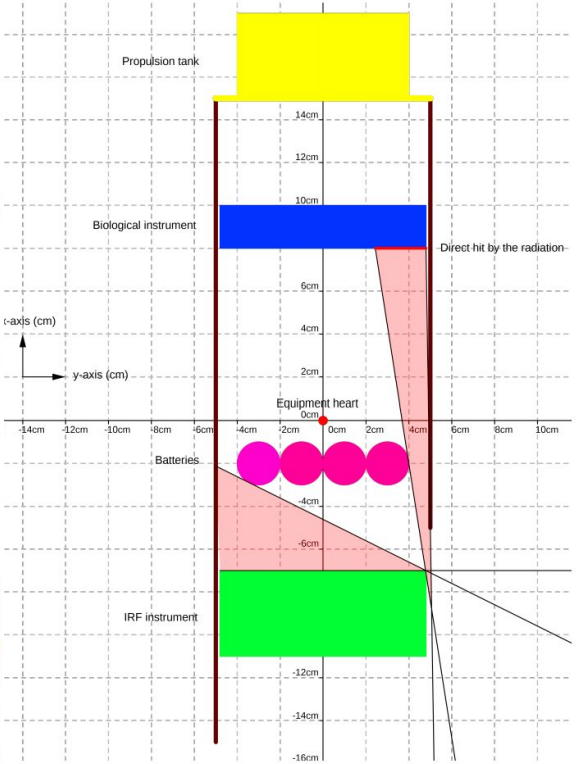




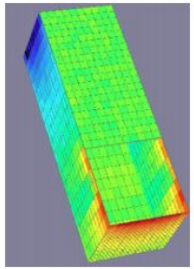


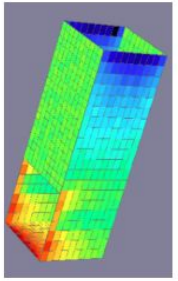
Explanation of the radiation band

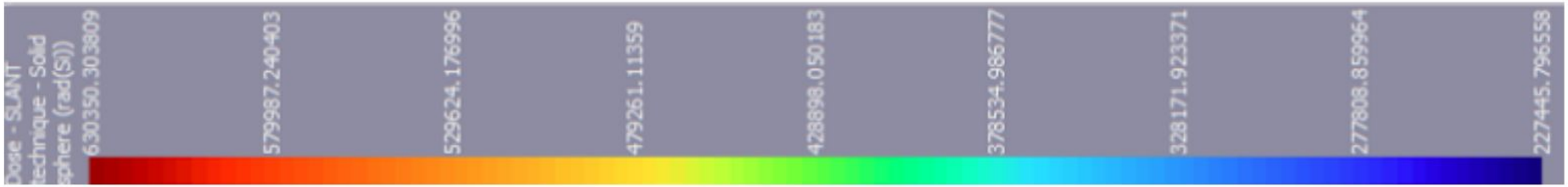




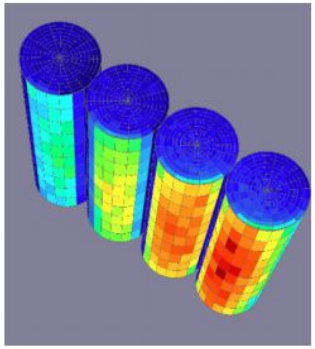
Exterior walls at 640km

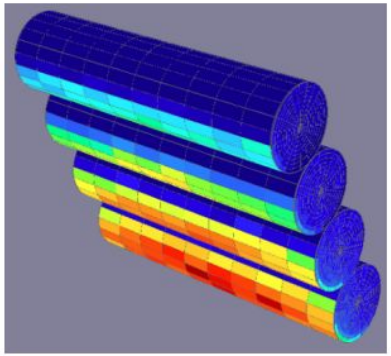


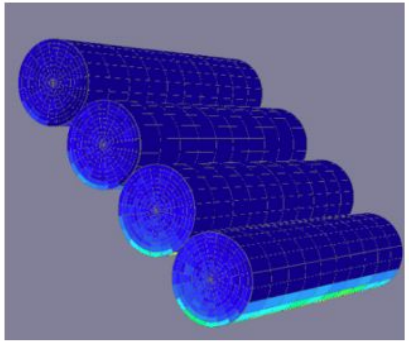


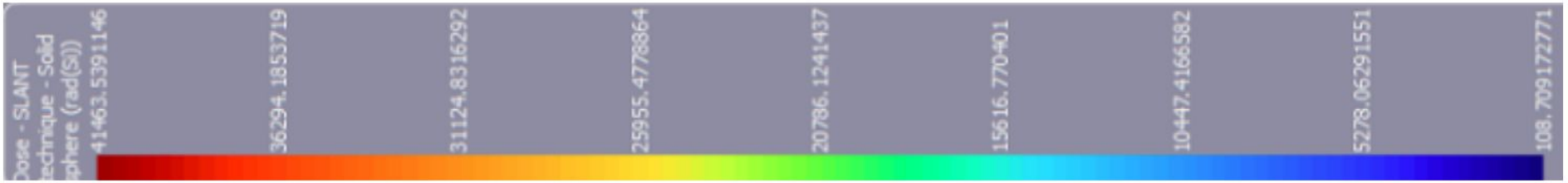


Batteries at 640km

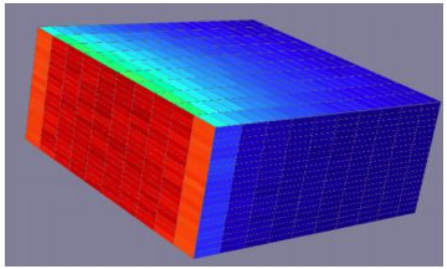


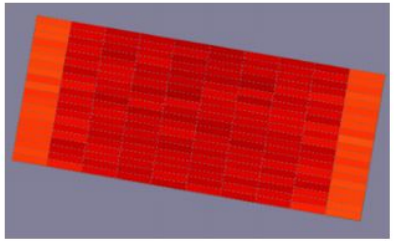


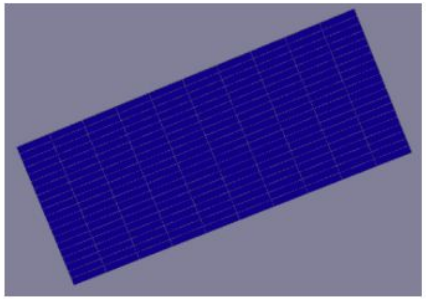


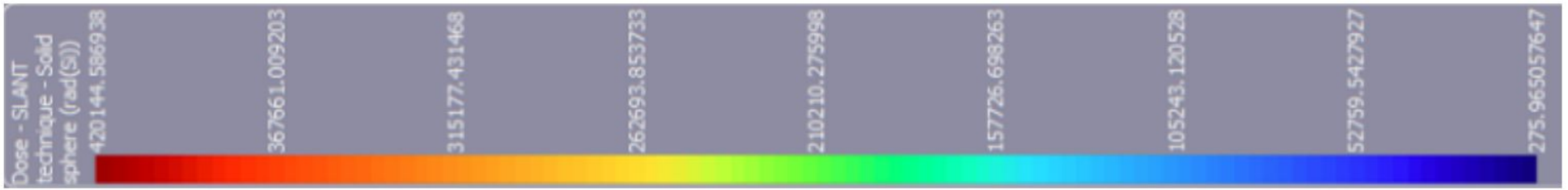


IRF experiment at 640km

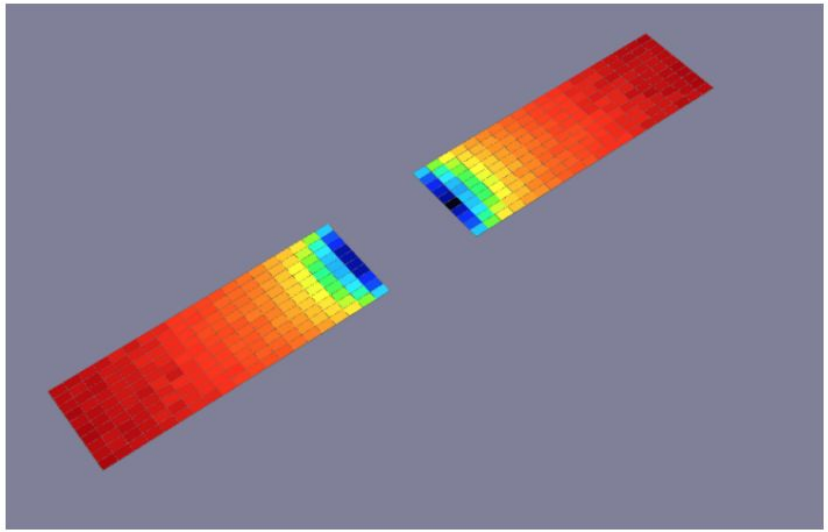


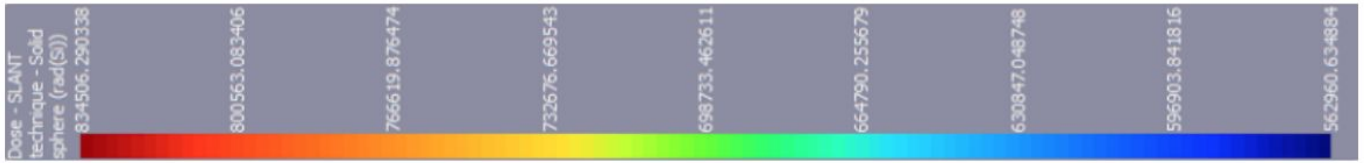




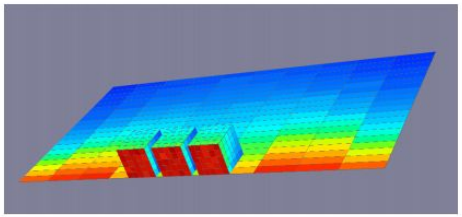


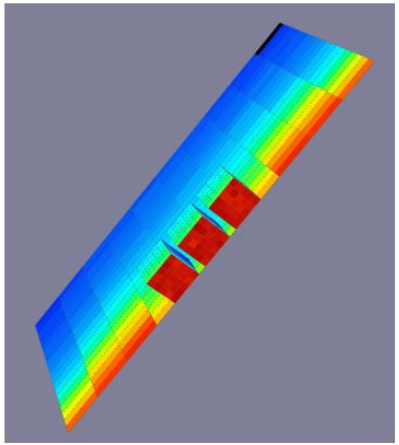
Solar panels at 640km

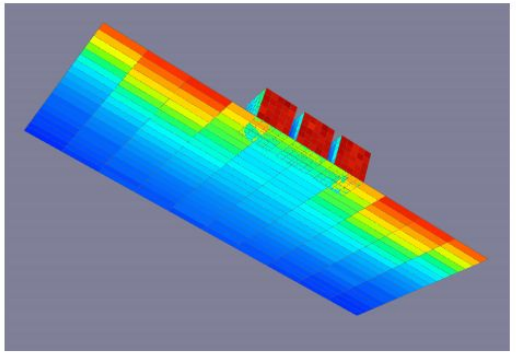


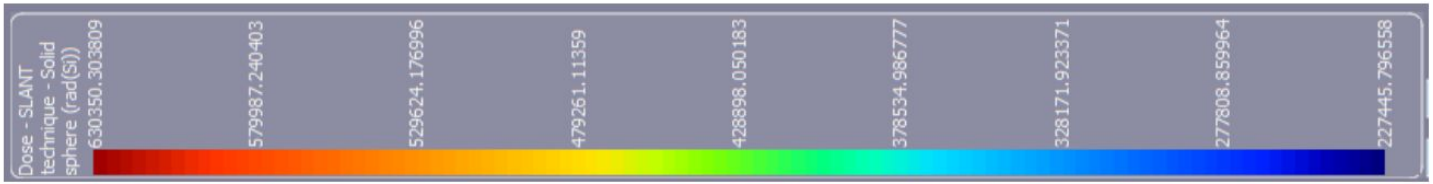


Additional CUBES Experiments









Thank you very much!

Question?